Dan Wall/EPR/R8/USEPA/US

09/13/2007 07:48 AM

To Bonita Lavelle/EPR/R8/USEPA/US@EPA
cc
bcc
Subject ou3 comments

History: This message has been forwarded.

OU3SAPComments_DW.doc

DAN WALL'S COMMENTS

RECEIVED 9/13/2007

General Comments

This draft is much better at emphasizing the preliminary nature of the Phase I sampling event, especially in regard to the biota sampling. I have suggested edits elsewhere to strengthen this. The General DQO section follows the 7 step process but when the text gets to the media specific DQOs, the logic is harder to follow. It is probably not feasible to make such a large edit but it would be more concise, albeit more writing, if each media (objective really) were described formally following the 7 steps process.

I have tried to remove any reference to density and diversity from the text regarding small mammals. I don't think that is the phase I objective. We will be collecting data to support that endpoint but this event is clearly inadequate to determine density and diversity.

Section 2.1.2, 2nd paragraph, 5th sentence

It is unclear to me that Rainy Creek actually is diverted around the tailings impoundment. It appears from the aerial that there may *have been* a diversion but based on comments from Remedium during our site visit and observations during a subsequent visit, Rainy either flows beneath or onto the tailings impoundment. The flow path of Rainy Creek should be independently verified if possible.

Section 2.2 – Problem Definition

I suggest that this section include the disclaimer that is elsewhere in the test. Suggested text is below.

Therefore, the problem to be addressed is the collection of sufficient information to allow reliable evaluation of risks to humans and ecological receptors from exposure to mining-related releases in OU3 and to support the development and evaluation of remedial alternatives to address unacceptable risks. This will occur over multiple, phased sampling events and phase I is not expected to provide data that will be sufficient to fully characterize the nature and extent of contamination or to support a risk assessment.

Section 3.2, Historical SW data

This data should be presented to allow assessment of asbestos concentrations and any trending of asbestos releases. Graphically, tabular or appendix.

Last paragraph of the section lists the results of table 3.2 as f/ml and Table 3.2 lists them as S/ml. These should be consistent.

Section 3.6

We recently learned that the USFS has biological data from Rainy Creek. It is unlikely that this data can be accessed in time to meet the deadline of this report but should be documented and reviewed in future reports. Paul Hooper is the biologist at the station but I recommend initially contacting Malcolm Edwards. I can assist in this if necessary.

Libby Ranger District
Canoe Gulch Ranger Station

Phone: (406) 293-7773
12557 Highway 37 North
Libby, MT 59923
Malcolm Edwards, District Ranger

Figure 4-3 and associated text in 4.2.3

Amphibians need to be added to the asbestos CSM. Boreal toads have been described at the site and are considered a Montana Species of Concern. A toad was observed during a recent site visit. The toad migrates between terrestrial non-breeding habitat and aquatic breeding habitat. To my knowledge no information exists on the effects of asbestos on toads, but life history characteristics of this animal suggest potentially multiple routes of exposure. Because of the role of amphibian skin in respiration and water regulation, direst contact may be an important pathway. Lots of ?'s on the CSM for this receptor group.

There is no reason to believe, at this point, that asbestos adversely affects plants but there appears to be a fair amount of stressed vegetation on the disturbed areas of the site. This could be caused by many non-chemical stressors and I do not foresee a need to do a quantitative evaluation of the effects of direct contact of asbestos and I suggest that the CSM is modified, for both aquatic and terrestrial plants, to open circles.

Figure 4-4 - CSM

At this point I think we have no reason to suspect that aerial deposition of non-asbestos chemicals onto foliar surfaces is an important pathway. I suggest that this pathway be deleted or the boxes are left blank. The inhalation pathway should be removed.

Section 4.3 and 4.4.1

It is not emphasized strongly enough in the description of the for Phase I sampling or the Problem Formulation that there are 1) many logistical hurdles that need to be over come to assess the feasibility of a broader sampling effort 2) a lack of specific information on the terrestrial species present on the site 3) expected small mammal trapping efficiency and 4) preliminary estimates of small mammal exposure. While not all of these are unique to the biological sampling, I suggest that these unknowns, and any others that you can think of, are explicitly described in the text in a separate paragraph.

Section 4.4.1 – State the Problem

I would reiterate in this paragraph that more detailed, media specific problem formulation is provided below.

Section 4.4.2 -- Identify the Decision

• *What*, as determined by the extent of contamination, *will be the study area for Phase II of the remedial investigation of OU3?*

• *What contaminants and what media will be investigated in Phase II of the remedial investigation of OU3? Which (if any) can be excluded by comparison to appropriate human and ecological benchmarks?*

• *Are benthic macroinvertebrates likely to be important to study in Phase II of the remedial investigation of OU3?*

• *What species of small mammals are present on the site and what is the concentration of asbestos in selected tissues?*

• *Of the various types of contamination within the mine area, which are likely to be the most important sources of release to other media?*

Section 4.5.7 – Biota

2) obtain reconnaissance level data on the species of small mammals near the mine area compared to an area remote from the mine, and gather preliminary information to determine expected trapping efficiency for future sampling events.

Section 5.0 and Table 5-1

The table and text should be modified to indicate that biota are not included in 5-1 or biota should be included in the text.

Section 5.2.1 and Figure 5.2

These stations should be moved to align with the benthic sampling stations where appropriate. I think more stations than those being sampled for benthos are fine but the sed/water should be co-located with the biota. These are easily accessible and obvious sampling locations. Additionally, URC2 should be added for sed and water, and URC1 is dry as of 9/5/2007.

While reading this document, it struck me that we do not have a station below the Mill pond and above Carney Creek. Our benthic station is below this confluence. I fear that we will have difficulty separating the potential load (SW and SED) from Carney and the Mill pond. If there is a station that is appropriate to move/add to this location to meet the objective of nature and extent I suggest we do so.

Section 5.2.3 – Sediment Sampling for Chemical and Asbestos Analysis

I think it is unlikely to be able to sample 4 inches deep in Rainy Creek without hitting rock or collecting a lot of sand size material. Metal and organic contamination is likely to be concentrated in the fines and is a more relevant BMI exposure point but I don't know about asbestos. It may be buried somewhat deeper as surficial fibers have been washed away. Fines will be more reflective of current releases and deeper coarser material will be reflective of historical releases. Thoughts?

Section 5.2.3 – Sediment Sampling for Toxicity Testing

This paragraph needs to be re-written to reflect the changes that have (are) occurring. The sediment toxicity testing will be 8 replicate samples and three species. Samples will not be collected from Rainy Creek for toxicity testing but will be collected as a 5 point composite from only the tailings impoundment and from the mill pond. 5 gallons of sediment is needed.

In cases where sufficient sediment toxicity is observed, an assessment of the likely cause of the toxicity may be performed using EPA's Toxicity Identification Estimation (TIE) method.

Sufficient toxicity is a best professional judgment. Too little toxicity and the noise to signal is too high for TIE to be effective.

Table 5.3 needs to be corrected to remove the Kootenai samples and properly reflect the Rainy and Pond Stations.

Section 5.4.2 – Tree Bark

The last sentence indicates that only one centimeter of surface area will be sampled. Is this consistent with Tony Ward's methodology? It seems to me that this will unnecessarily introduce error into the measurement. If the sample is ashed and the fibers concentrated (I am not sure it is concentrated) then why aren't we taking a larger area to get a more representative sample. Additionally, I think it will be difficult to cut a sample that small without significantly disturbing fibers on the surface of the bark. How about $5cm^2$?

5.6 Biota - *5.6.1 Experimental Design*

Aquatic Receptors

Effects of mining-related contamination on aquatic organisms will be evaluated using a weight of-evidence approach that considers three lines of evidence, including: 1) comparing the extent of chemical contamination in surface water and sediments to concentrations known to be associated with adverse effects (hazard quotients where they are available);

Figure 5-5V2

These stations need to be moved to the correct locations that have been provided. No biological sampling will be done in the ponds in phase I. Location SMT-2 will be at a reference area to be determined and it may not be in the direction the arrow is pointing.

Table 5-6

This needs to be changed to reflect this weeks thinking. No sediment tox testing in Rainy, SMT-2 needs to be changed to a to be determined location, SMT-1 (Northeast corner of site adjacent to disturbed area). Descriptors of Rainy Creek locations need to also be modified as needed. Panel B "Small mammal density and diversity" should reflect that we are measuring presence or absence and what type of species.

Section 5.6.1

Terrestrial Receptors

In Phase I, collection of terrestrial biota will focus on small ground-dwelling mammals (mice, shrews, voles). These will be sampled by placing arrays of small mammal traps at two locations as shown on Figure 5-5. One location is just to the north (downwind) of the mined area (SMT-1) in a transitional zone between meadow and forested habitats. A second array (SMT-2) will be located at a reference location located at an area of similar habitat (to be determined). The data that will be collected at each station will include the number of animals caught per trap day and the species of animals trapped.

Comment [DW1]: I suggest that here and elsewhere in the text, figures and tables that the station name be changed to SMT-ref 1. We will undoubtedly be adding more stations on the site and #2 should be reserved for site stations.

Comment [DW2]: I have rewritten this because I am hesitant to even say we will measure density and diversity. We will not have a defensible dataset to say we have measured it and to be consistent with the objectives (see above) we need to convey this throughout the document.

Up to 5 animals of each species that are captured at each sampling area will be humanely euthanized, inspected for lesions and abnormalities (necropsy) and selected tissues frozen for measurement of asbestos.

Comment [DW3]: We may need more discussion of which tissues those are. There are some new players on the site who will likely weigh in.

Comment [DW4]: I am hearing that freezing may alter the fiber size distribution and other methods are preferred. Mary or Wendy should weigh in on this.

Section 6.1

It is unclear if all the samples for all media are being analyzed for asbestos.

Section 6.2.2 and Table

Between the text and the tables and reading this on my computer I am confused as to what is being analyzed and where. As stated in a comment above I suggest that we get a station below the Mill Pond and above Carney Creek to distinguish their contributions. The text needs to correct the station id's to reflect LRC-1 is essentially the same as the tailings impoundment TOE sample. The expanded sampling should be at LRC-2 and I suggest at the outfall of Mill Pond above Carney Creek.

Section 6.3

I think we need a confirmation discussion on which tissues we are going to analyze for asbestos.

BMI SOP-Page 6

We are working to get a written SOP from the Forest Service since we will be making comparisons with their data. They do not do the "jab/kick" sampling that is in the SOP but we should keep it to get a more quantitative estimate of diversity. In conversations with Paul Hooper, they used a Hess sampler, not Eckman so we need to use a Hess also. He indicated that they typically sample a riffle a run and something in between. 3 replicate samples/station that are analyzed separately.